

LiDAR SAL-1500 AcuteLas Series

Recommended UAV Platform

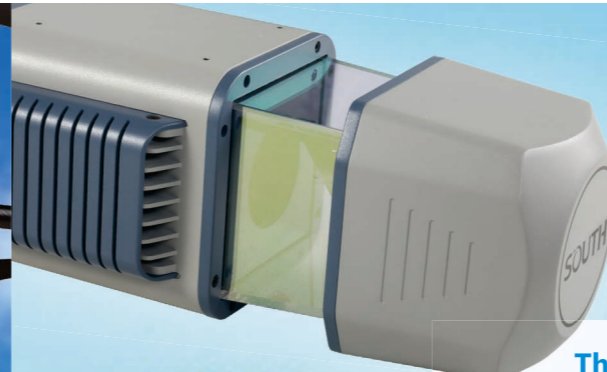
Model Code	Bravo
Series	Fly2Map
Aircraft Type	hexacopter, with foldable propellers
Control Method	vertical take-off & landing
Structure	fully integrated, assembly free
Diagonal Distance	1,650 mm
Payload Capacity	≥ 10 kg
Payload Mode	supports multiple payloads to carry
Payload Mounting	toolless assembly, flange connector available
Max. Take-off Weight	21 kg (batteries included, without payload)
Power Supply	lithium polymer battery propulsion (6 units as a group, one key to start up)
Battery Power	12,000 mAh, 6S, 26.1 V
Battery Charging Time	approx. 1.5 h (@15 A) for each
Terrain Awareness/Following	available, local DEM data needed to import
Obstacle Sensing	forward ≥ 60 m, millimeter-wave radar detection
Downward Laser Ranging	≥ 60 m, for precise landing control
Max. Service Ceiling	6,000 m ASL
Fail-safe System	5 functioning motors to support safe landing in case of emergency
Cruising Speed	≥ 18 m/s
Endurance	90 min (without payload)
Effective Flight Duration	70 min (with 1 kg payload); 50 min (with 5 kg payload)
Response Time	setup < 10 min; packing < 10 min
Weather Limit	beaufort scale 6
Operating Temperature	-20~+50°C
Environmental Humidity	90% condensing
Ingress Protection Rating	IP 45
Running Light	available on board, for better visibility especially when working in the dark
Positioning System	dual redundancy design
Airborne GNSS Module	GPS/Glonass: L1/L2, Galileo: L1/E5a, Beidou: B1C/B2a
GNSS Module Control	USB or Wi-Fi
Differential Mode	GNSS RTK/PPK, dual antenna for differential and orientation
Data Refresh Rate	≥ 100 Hz
Positioning Accuracy	H. ≤ ±1cm+1ppm; V. ≤ ±2cm+1ppm;
Video Transmission	FPV (adjustable), 1,080 P
Remote Controller Datalink	Wi-Fi + type C + RD-link
Internet Access	via external SIM card
Control Frequency	2.4 - 2.483 Ghz
Radio Datalink Range	≥ 15 km (without obstruction and interference)
Stick Mode	one key to switch in remote controller
Display Terminal	integrated with LED screen, Android OS
Payload Setting	available in default flight planning & ground control software
Transportation Case Size	800x800x1000 mm
Flight Planning Option	block mapping, corridor mapping, waypoint flight, surround flight, cross flight and other customized routes



50+ min endurance with LiDAR

Terrain Awareness & Obstacle Sensing

LiDAR Setting Integrated with Flight Planning



LiDAR SAL-1500 AcuteLas Series

The men are talking about the mission zone of a 970-hectare survey job.

- CLIENT: the vertical height drop there is almost 450 meters...
- SURVEYOR: don't worry, our scanning range is up to 1,500 meters.
- CLIENT: that forest has a very high vegetational cover like 85%...
- SURVEYOR: it's ok, coz' it's more likely for each laser beam to penetrate and reach the ground by 7 echo returns.
- CLIENT: as it's an inaccessible area, you may find it difficult to arrange lots of drone take-offs.
- SURVEYOR: when an aerial mission can last almost 1 hour instead of a couple of minutes, fewer flights are needed.
- CLIENT: oh, really? What's your recommended solution to this job?
- SURVEYOR: let's go with AcuteLas SAL-1500, an affordable medium-range LiDAR system.

Product Type	universal LiDAR system	
Series	AcuteLas	
Application Mode	UAV-based/aircraft-based/SUV-based	
Power Consumption	25 W	
Input Voltage	18-48 V	
Temperature Range	operating -20~+40°C; storage -20~+50°C	
Dimension (LxWxH)	297x180x120 mm	
Net Weight (w/o camera)	3.89 kg	
Ingress Protection Rating	IP 64, dustproof and splash-proof	
Device Access	Ethernet cable connection or web UI	
Device Control	computer interface or remote controller display	
Mission Parameters Setting	available in mobile carrier platform (eg. UAV flight planning software)	
Internal Memory	128 GB, expandable upon request (eg. 1 TB)	
External Memory	SD card slot available	
Part I: Laser Scanner		
Sensor Type	lightweight, pulse, survey-grade	
Measuring Range (natural targets p 80%)	max. 1500 m	
Max. Effective Measurement Rate	2,000,000 points per second	
Accuracy / Precision	15 mm @150 m / 20 mm	
Speed of Data Acquisition	complies with 30-80 km/h	
Field of View	360° full range measurement performance	
Laser Product Classification	Class 1 Laser Product (according to IEC 60825-1:2014)	
Laser Wavelength	1500 nm	
Laser Beam Divergence	0.3 mrad	
Echo Return	max. 7 returns for each emitted laser beam	
Part II: Position & Orientation System (POS)		
Multi-constellation Tracking	GPS L1/L2, Glonass G1/G2, Beidou B1/B2	
Data Refresh Rate	600 Hz / 100 Hz	
Accelerometer Range	-20 g to +20 g	
Angular Input Range	-400°/s to +400°/s	
Heading Accuracy (post processed)	≤ 0.010°	
Roll/Pitch Accuracy (post processed)	≤ 0.005°	
Positioning Accuracy (post processed)	H. ≤ 1 cm; V. ≤ 2 cm	
Part III: Imaging Sensor		
Fitting Mode	Aerial Mode	Automotive Mode
Integration Mode	attached to LiDAR externally	attached to LiDAR externally
Sensor Type	customized DSLR, full framer	360° spherical camera system
Sensor Model	South S61	FLIR Ladybug5+
Imaging Type	orthophotography, RGB	panorama, RGB
Imaging Output	DOM (Digital Orthophoto Map)	panorama Image
Mixed Output	colorized point cloud	colorized point cloud
Resolution	61 MP	30 MP (5 MP*6 sensors)
Focal Length	28 mm	/
Acquisition Rate	/	approx. 10 images per second
Weight	500 g	3 kg
Power Supply	external, via UAV platform	external, via customized power bank
Triggering Mode	triggered by LiDAR device	independent
Data Storage	inbuilt SSD 256 GB	connected to laptop for storage

2 million points per second

3.89 kg net weight

1,500 m scanning range max.

- ✓ Extremely lightweight unit with compact design
- ✓ Survey-grade sensors integrated for accurate topography
- ✓ Ready to fit a variety of mobile carrier platforms
- ✓ Complete software kits available for abundant outputs
- ✓ Field-proven solutions and project-based background

SUV-based roof rack

360° spherical camera system

King-size GNSS antenna
(1st as default, 2nd available upon request)

Customized power bank

SUV-based fitting pack

SUV-based Application

(Distance Measurement Indicator, as an option)

Distance measurement indicator

Fly with a VTOL fixed-wing drone
(different options) to replace multi-rotor
for longer endurance (eg. 2-6 hours).

Fly with a multi-rotor UAV (comparably
cost friendly) for small areas that are
considerably elevated and inaccessible.

Fly with a manned aircraft to challenge
those much bigger mission zones with
complex terrain and dense vegetation.

Drive when it's possible. Mostly used
for road expansion or reconstruction
topography, and road assets inventory.

